

REMARKS

Claims 1-4, 11-13 and 20-39 were previously pending in the present application. Please cancel claims 2, 3, 12, 13, 22, and 23. No new matter has been added to the claims.

The following remarks address the rejections of claims 1-4, 11-13 and 20-39 as set out by Examiner in the Final Office Action mailed on October 20, 2005.

Rejections of Claims 1 and 20 under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1-4, 11-13, and 20-30 under 35 U.S.C. § 103(a) based on the teachings of Augusteijn, et al. (U.S. Patent 6,292,883) in view of Saylor, et al., (U.S. Patent 6,501,832).

Applicants have amended claim 1 to include limitations of previously pending dependent claims 2 and 3. Applicants respectfully submit that now amended claim 1 includes additional limitations not found in any of the cited references. For example, claim 1 recites inclusion of: "a storage device, which stores state information related to execution of said compiled document data; and a backup VoiceXML Interpreter communicating with said storage device, the backup interpreter providing a response to a user in the event of a failure associated with a primary voice response system."

To reject this element of the claimed invention, the Examiner cites Saylor at column 18, lines 59-65 that reads as follows:

VPage menu module 36 may also comprise a VoiceXML interpretation module, a Nuance Grammar specification language module or a Java Speech grammar format module. VPage menu module 36 may interpret predefined menu options

and determine which of the options to execute based on choices selected by the user from a choice interpretation module 42, as described below.(emphasis added)

Applicants respectfully submit that this language in Saylor does not teach or suggest a “backup” (e.g., one that is used in the event of a failure) VoiceXML Interpreter communicating with a storage device that stores state information related to execution of a compiled document. The inventive configuration as recited in now amended claim 1 enables the interactive voice response system to use a backup VoiceXML Interpreter to provide a response to a respective user even if there is a failure associated with a primary voice response system. The cited passages do not discuss a backup Interpreter. Nor does the cited passage teach or suggest occurrence of a failure prompting use of a respective backup Interpreter.

Moreover, Augusteijn does not store compiled document data as described in the context of an interactive voice response system as in the present invention as discussed in the reply to the last office action. For example, one of ordinary skill in the art would interpret a “document” in the claimed invention to be a resource such as a text-based document for maintaining response data potentially requested by a user of the interactive voice response system. Neither Augusteijn nor Saylor discuss pre-compiling such documents prior to execution of a user requesting a respective text-based document. Instead, Augusteijn discusses executing an application program or source code. There is no mention of a document that can be requested from a user via audio input. Thus, even a combination of references does not recite the limitations as in claim 1.

As discussed in the last office action reply, a benefit of storing pre-compiled executable document data as in the claimed invention is the ability of the claimed interactive voice response system to respond more quickly to a user

requesting the text-based document because the document data is already in compiled form and stored in the cache prior to the request.

Applicants respectfully submit that in view of the above amendment and remarks, claim 1 is novel and non-obvious as it incorporates techniques contrary to previously accepted wisdom and blueprints for the inventive method cannot be found in the individual or combined cited references. Accordingly, Applicants submit that independent claim 1 and corresponding dependent claim 4 are in condition for allowance over the prior art.

For similar reasons as claim 1, claim 11 should be in condition for allowance.

Rejection of Claim 20

Applicants have amended claim 20 to include limitations of previously pending dependent claims 22 and 23. Applicants respectfully submit that now amended claim 20 includes additional limitations not found in any of the cited references. For example, claim 20 recites inclusion of: "wherein the fetcher initiates communication with a remote server to retrieve a text-based document associated with the requested information if corresponding executable code is not stored in the cache; and a compiler that converts retrieved text-based documents into executable code for storage in the cache."

To reject this element of the claimed invention, the Examiner cites Augusteijn at column 7, lines 1-44 that reads as follows:

The instruction memory 120 contains virtual machine instructions, such as instructions for a stack machine. The instruction memory may also be used for storing data. The invention is not limited to Harvard architecture, wherein data and instructions are separate. The microcontroller 110 comprises a processor 112 with a predetermined microcontroller core 114, referred to as a native machine,

for executing native instructions from a predetermined set of microcontroller specific instructions. An example of a microcontroller suitable for executing embedded software is a RISC-type microcontroller, like the MIPS PR3001 range of microprocessors. The processor may comprise an instruction cache 116 for storing native instructions before executing the instructions. The native instructions of the microcontroller core 114 are different from the virtual machine instructions of the virtual machine. As such the microcontroller 110 is not able to directly execute virtual machine instructions stored in the instruction memory 120. In response to the processor 112 requesting an instruction, the pre-processor 130 issues the native instruction. In order to be able to generate the native instruction the pre-processor 130 may fetch a virtual machine instruction from the instruction memory 120 using fetching means 134. The converter 132 of the pre-processor 130 is used for converting a virtual machine instruction, fetched from the instruction memory 120, into at least one native instruction. In general, a virtual machine instruction is converted into a sequence of native instructions. The pre-processor 130 further comprises a feeding means 136 for feeding native instructions of the sequence to the microcontroller core 114 for execution. When executing a virtual machine program the microcontroller 110 in fact executes a native program generated by the pre-processor 130. Where normally an instruction pointer of the microcontroller 110 indicates the next instruction in the instruction memory 120 required by the microprocessor 110 to be executed next, now the instruction pointer indicates to the pre-processor 130 that a next native instruction is required (or a re-feeding of a previous instruction). Consequently, the pre-processor 130 manages an independent virtual machine instruction pointer indicating the current (or next) virtual machine instruction in the instruction memory 120. The microcontroller does not require (explicit) knowledge of the virtual machine instruction or the virtual machine instruction pointer.

Applicants respectfully submit that this language in Augusteijn merely discloses a method of compiling instructions "on the fly." This passage provides no

indication of including a fetcher that initiates communication with a remote server to retrieve a text-based document associated with the requested information if corresponding executable code is not stored in a cache. Nor does the passage recite a system including a compiler that converts retrieved text-based documents into executable code for storage in the cache.

More specifically, as previously discussed in the reply to the last office action, Applicants pointed out that previously presented claim 22 recites inclusion of “wherein the fetcher initiates communication with a remote server to retrieve a text-based document associated with the requested information if corresponding executable code is not stored in the cache.” Applicants respectfully submitted that neither reference addresses having to retrieve a text-based document not already having corresponding executable data stored in the cache. First, neither reference teaches storage of executable code associated with a text-based document. Second, neither reference teaches a technique of conditionally retrieving a document if corresponding executable code associated with the document is not already stored in the cache. The Examiner has not addressed this argument in the last office communication.

Additionally, Applicants pointed out that previously presented Claim 23 recited inclusion of “a compiler that converts retrieved text-based documents into executable code for storage in the cache.” Applicants respectfully submitted that neither reference includes a compiler that converts retrieved text-based documents as used in the context of an interactive voice response system into executable code for storage in a cache.

Applicants respectfully request that the Examiner point out specific passages that disclose or suggest these claim limitations in now amended claim 20 or pass the claim to issue.

Dependent claims 21, 24-29, and 32-33 should be allowable because they depend from allowable claim 20.

Note that claim 33 further distinguishes claim 20 over the cited art. For example, claim 33 recites: "wherein the executable code stored in the cache is used at a later time to respond to corresponding future requests with respect to the text-based documents."

To reject this element of the claimed invention, the Examiner cites Saylor at column 38, lines 45-54 that reads as follows:

Jack missed the Yankees-Boston game and is ready to find out all the details. He connects to Blackbird and enters the VCode for the relevant article (V 38373-272). Once he dials this number, Jack is on the Washington Post VBook and to navigate between articles, he only needs to dial the three digit VPage identifier codes. The dialog between Jack and the VNAP system 12 may be as follows:

Blackbird: Would you like to replay important sections from the game or hear interviews?

Jack: Interviews.

Blackbird: Would you like to hear an interview with Bernie Williams?

Jack: Yes. Upon this request Blackbird replays an interview recording with Bernie Williams. It is a five minute long interview and Jack just needed to hear the first three minutes.

Jack: Skip.

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Blackbird: Would you like to buy a Yankees T-shirt or hear an interview with the Yankees Manager, Joe Torre? Press 1 for a T-shirt. Press 2 for the interview.

Jack: I would like to buy a t-shirt please.

Applicants respectfully submit that there is no teaching or suggesting in this passage that executable code be stored in a cache to service future requests.

Rejection of Claim 30 under 35 U.S.C. § 103

The Examiner has rejected claim 30 under 35 U.S.C. § 103(a) based on the teachings of Augusteijn, (U.S. Patent 6,292,833) and Saylor, et al, (U.S. Patent 6,501,832).

Applicants again note that the office action cites art purporting to teach the first two claim elements. However, there is no indication in the office action of specific art or corresponding references that are used to reject the last two claim elements that read as follows: "searching a cache for executable code associated with the requested audio information, the executable code generated in response to a previous request from another user for audio information associated with the text-based document; and executing corresponding executable code from the cache to satisfy the request for audio information associated with the incoming call." For this reason, Applicants respectfully submit that the Examiner has not set forth a proper obviousness rejection.

Applicants respectfully submit that neither of the cited references teaches or suggests the limitations of claim 30. First, Augusteijn does not teach or suggest a technique of searching a cache for executable code associated with requested information. Second, Augusteijn does not execute code retrieved from the cache to satisfy a request for audio information associated with an

incoming call. Third, and perhaps more importantly, claim 30 recites that the executable code stored in the cache is generated in response to a previous request by another user for audio information associated with the same text-based document. In other words, a first user that previously requested the same text-based document causes the document to be compiled and stored in the cache for later use by other requesting users. According to the invention, there is no need to recompile the document for the later requesting user because the compiled executable document is stored in the cache. Thus, Applicants submit that the claimed invention includes elements not found in either of the cited references and there is no basis to maintain the rejection of claim 30. Applicants therefore respectfully request allowance of claim 30 and dependent claim 31.

Claim 31 provides additional limitations distinguishing claim 30 over the cited art. For example, claim 31 recites: "searching amongst multiple sets of stored executable code in the cache for the executable code associated with the requested information, the multiple sets of executable code in the cache corresponding to documents previously compiled as a result of other respective users previously requesting audio information associated with the documents." This limitation is also not taught or suggested by the passages cited at column 8, lines 14-35, which reads as follows:

According to at least one embodiment, the content of a VPage is preferably an XML-based voice content file (e.g., TML or VoiceXML) that may be interpreted by a XML-based voice content interpreter and played for the user via the user's phone. As discussed below, XML-based voice content files are structured to provide call flow. According to another embodiment, a VNAP may also maintain an index of information or other content that is available corresponding to a VCode. For example, a VNAP may store XML-based voice content VPages, each having a corresponding VCode and may also store an index of other information (in other formats), where selected index entries may be provided to the user (e.g.,

via a voice menu). If the user is interested in one of the indexed entries, the VNAP retrieves the information corresponding to the selected indexed entry and provide it to the user via the user's phone. For example, the VNAP may pass the information through a text-to-speech engine to create a sound file and play the sound file for the user via the user's phone. Alternatively, or in addition thereto, text or other content may be displayed on or output to the user's phone or other terminal device. Dynamic VPage generation may also be provided where VPage content is generated on the fly from other content.

This passage merely discloses that a VNAP may store an XML-based document. The claimed invention recites that the multiple sets of executable code in the cache corresponding to documents previously compiled as a result of other respective users previously requesting audio information associated with the documents. These concepts are not equivalent and Saylor does not anticipate such a limitation. Applicants respectfully request allowance of claim 31 as well.

Rejection of Claim 34

Applicants respectfully submit that claim 34 includes limitations not taught or suggested by the cited references. For example, claim 34 recites inclusion of the limitation: "a cache that stores sets of executable code associated with corresponding previously compiled documents that can be requested from the given user." Applicants traverse the rejection of claim 34 because the cited reference discloses a technique of pre-compiling instructions "on the fly." There is no indication in the Augusteijn reference that a whole document is pre-compiled for later execution.

Claims 35-39 depend from claim 34 and should be allowable as well.

Claim 35 recites "wherein the corresponding executable code is stored in the cache as a result of a previous request with respect to the text-based

document, the fetcher searching the cache in order to retrieve the corresponding executable code from the cache for execution of the corresponding execution code by the execution thread to satisfy the request for audio information associated with the incoming request.” As discussed above, there is no indication in the cited passage that corresponding executable code is stored in a cache as a result of a previous request.

Claim 36 recites “wherein the corresponding executable code is executable speech code, the interactive voice response system further comprising: a compiler that converts the text-based document into the executable speech code for storage in the cache prior to receipt of the incoming request.” Applicants respectfully submit that the cited passage merely discloses a technique of enabling a user to modify voice settings. This is not equivalent to the above claim limitation.

Claim 37 recites “wherein the fetcher initiates communication with a remote server to retrieve a text-based document associated with the requested information over a network connection if the corresponding executable code were not stored in the cache.” Applicants respectfully submit that the cited passage merely discloses a technique of enabling a user to modify speech output settings. This is not equivalent to the above claim limitation, which happens to be directed to conditionally fetching a text-based document if corresponding executable code is not stored in a respective cache.

For the above reasons, Applicants respectfully request allowance of the pending claims.

Conclusion

In view of the foregoing remarks, Applicants respectfully submit that the claims of the present application are in condition for allowance. A Notice to this

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affect is respectfully requested. If the Examiner believes, after submission of this reply, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned Attorney at (508) 366-9600, in Westborough, Massachusetts

Respectfully submitted,



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